BANGALORE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

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JNANA BHARATHI
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BUB/CTE/2017-18/CA

Date: 24-08-2017

1. TESTING OF COARSE AGGREGATES (40mm):

Sub: Testing of Aggregates 40mm.

{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 21-08-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2002) % Passing	
	40 mm Sample	*Single size*	*Graded*
40mm	98.50	85-100	95 – 100
20mm	44.80	0 -20	30- 70
10mm	26.50	0 -5	10- 35
4.75mm	Nil	------	0 - 5

TABLE 1 2 :

SL No	Test conducted	Sample No	Results	Requirements as per IS:383-1970 & Test Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2002)
1.	Flakiness Index	As above	14.60 %	Not to exceed 25 %
2.	Crushing value	----,,----	26.60%	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

*As Furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2017-18/RS

Date: 24-08-2017

1. TESTING OF FINE AGGREGATES:

Sub: Testing of Fine Aggregate.
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 21-08-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2007) Percentage Passing				Remarks
		Zone-I	Zone-II	Zone -III	Zone -IV	
10.00	**100.00**	100	100	100	100	The Sample Conforms to Grading **Zone-II**
04.75	**96.40**	90-100	90-100	90-100	95-100	
02.36	**87.80**	60-95	75-100	85-100	95-100	
01.18	**72.60**	30-70	55-90	75-100	90-100	
600. mic	**42.10**	15-34	35-59	60-79	80-100	
300.mic	**19.00**	5-20	8-30	12-40	15-50	
150.mic	**3.90**	0-10	0-10	0-10	0-15	

TABLE 1.2 ;

Sl No	Test Conducted	Sample	Results	Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2007)
1.	Specific Gravity	001	**2.62**	----------

*As Furnished by client.
The Results relate only to the items tested

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BUB/CTE/2017-18/C-

DATE: 29-08-2017

1. TEST REPORT ON CEMENT:

Sub: Testing of 43 Grade Cement Sample (IS 8112-1989).
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 21-08-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

Technical Reference: IS: 4031-1988 (RA on 2009) & IS: 8112-1989.

PHYSICAL TESTS ON CEMENT

Brand : RAMCO
Grade * : 43,
Type * : O.P.C
Period of test : 21-08-2017 to 28-08-2017

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**165 min**	Shall not be less than 30 min
2	Final setting time	**270 min**	Shall not be more than 600 min
3	Fineness – Specific surface of cement (by Blaine's air permeability method)	**2702.00 Sq.cm/g**	Shall not be less than 2250 Sq.cm/g
4	Soundness test(by Le-Chatelier's method)	**1.70 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results) b) 7 days (average of three results).	**26.20 N/ Sq mm** **41.50 N/Sq mm**	Shall not be less than 23 N/Sqmm Shall not be less than 33N/Sqmm

*As furnished by Client.
The Results relate only to the items tested.

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BUB/CTE/2017-18/ C-

DATE: 18-10-2017

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (28 days Compressive Strength)
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18 dated 17-10-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{15}

Location* : PCC

TABLE 1.1 :

Sl No	Location/ Identification *	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	20-09-17	17-10-17	28	22500	400	17.77	17.92
	002	"	"	"	"	410	18.22	
	003	"	"	"	"	400	17.77	

*As Furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2017-18/ C-

DATE: 23-10-2017

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (28 days Compressive Strength)
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 23-10-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{15}

Location* : covering slab

TABLE 1.1 :

Sl No	Location/ Identification *	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	24-09-17	23-10-17	29	22500	410	18.22	18.07
	002	"	"	"	"	405	18.00	
	003	"	"	"	"	410	18.22	

*As Furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2017-18/

Date: 09-10-2017

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (with close graded materials, Grade-II) mix.
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18 dated 07-10-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

TEST RESULTS

1. **Gradation Test:**

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, IV Revision-2001
53.00	**100.00**	100
26.50	**79.80**	70-100
9.50	**64.50**	50-80
4.75	**47.20**	40-65
2.36	**36.30**	30-50
0.425	**20.35**	15-25
0.075	**6.40**	3-10

*As Furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2017-18/

Date: 11-10-2017

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (with close graded materials, Grade-II) mix.
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}
Ref: Letter No.Testing/BUB/2017-18, dated 10-10-2017
Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.
Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

TEST RESULTS

1. **Gradation Test:**

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, IV Revision-2001
53.00	**100.00**	100
26.50	**76.60**	70-100
9.50	**63.50**	50-80
4.75	**46.25**	40-65
2.36	**34.00**	30-50
0.425	**21.40**	15-25
0.075	**7.40**	3-10

*As Furnished by Client.
The Results relate only to the items tested.

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BUB/CTE/2017-18/

Date: 10-10-2017

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (with close graded materials, Grade-II) mix.
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 09-10-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division, BBMP, Bangalore.

TEST RESULTS

1. **Gradation Test:**

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, IV Revision-2001
53.00	**100.00**	100
26.50	**75.80**	70-100
9.50	**65.60**	50-80
4.75	**46.70**	40-65
2.36	**35.20**	30-50
0.425	**22.30**	15-25
0.075	**6.90**	3-10

*As Furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2017-18/

Date: 12-10-2017

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (with close graded materials, Grade-II) mix.
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 10-10-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers.
Bangalore.

Report required for: Assistant Executive Engineer,
Yelahanka New Town Sub-Division,
BBMP, Bangalore.

TEST RESULTS

1. **Gradation Test:**

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, IV Revision-2001
53.00	100.00	100
26.50	76.90	70-100
9.50	62.50	50-80
4.75	47.10	40-65
2.36	34.70	30-50
0.425	21.60	15-25
0.075	7.10	3-10

*As Furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2017-18/ Date: 20-10-2017

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements to roads and drains at Akshaya Nagara Chitra Layout Chikkadinne and other Areas in Ward No.03}

Ref: Letter No.Testing/BUB/2017-18, dated 18-10-2017

Sample supplied to lab by: M/s Aishwarya Infrastructure and Developers. Bangalore.

Report required for: Assistant Executive Engineer, Yelahanka New Town Sub-Division BBMP, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, IV Revision-2001
53.00	**100.00**	100
45.00	**97.10**	95-100
26.50	**---**	-
22.40	**74.00**	60-80
11.20	**48.60**	40-60
4.75	**35.00**	25-40
2.36	**24.00**	15-30
0.600	**18.50**	8-22
0.075	**5.10**	0-8

TABLE 1 2 :

SL No	Test conducted	Sample No	Results	Requirements as per IS:383-1970 & Test Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2007)
1	Flakiness & Elongation Index	01	**25.20 %**	Not more than 30 %
2	Impact Value	----,,----	**23.90 %**	Not more then 24.00 % for BC Not more then 27.00 % for DBM Not more then 30.00 % for BM/WMM

As Furnished by Client

The Results relate only to the items tested.

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